IN THE CLAIMS

1. (Currently Amended) Apparatus for electro-chemical deposition on a substrate, comprising:

an annular contact ring;

one or more electrical contact pads disposed on the contact ring;

a first seal disposed inward of the electrical contact pad and providing a seal with the contact ring;

a thrust plate adapted to move axially relative to the contact ring; ~~and~~

a second seal coupled to a side of the thrust plate facing the contact ring[[.]]; and wherein the first seal further comprises:

a base disposed in a groove at least partially formed in the contact ring; and

a lip extending from the base and flaring radially outward towards the contact pads, the lip having at least one sealing surface.

2. (Cancelled) The apparatus of claim 1, wherein the first seal further comprises:

a base disposed in a groove at least partially formed in the contact ring; and

a lip extending from the base, the lip having at least one sealing surface.

3. (Currently Amended) The apparatus of claim 1 [[2]], wherein the lip further comprises:

a first sealing surface adapted to seal with the substrate; and

a second sealing surface adapted to seal with the contact ring.

4. (Original) The apparatus of claim 1, wherein the contact ring further comprises:

a first surface;

a shoulder coupled to the first surface;

a substrate support surface extending inward from the shoulder and supporting the electrical contact pad thereon, the substrate support surface and shoulder defining a substrate receiving pocket; and

an inner ring surface disposed radially inward of the substrate support surface, the inner ring surface in sealing communication with the first seal.

5. (Original) The apparatus of claim 1 further comprising a third seal disposed between and selectively sealing the thrust plate and the contact ring.

6. (Original) The apparatus of claim 5, wherein at least one of the first, second or third seal is comprised of an elastomer.

7. (Original) The apparatus of claim 5, wherein the second seal extends further from a bottom of the thrust plate and the second seal.

8. (Currently Amended) The apparatus of claim 5, wherein the thrust plate further comprises:

a first groove disposed in a bottom of the thrust plate, the first seal disposed in the first groove[[.]] ; and

a second groove disposed outward of the first groove, the third seal disposed in the second groove.

9. (Original) The apparatus of claim 1, wherein the thrust plate and the first seal define a plenum that is evacuated to chuck the substrate to the thrust plate.

10. (Original) The apparatus of claim 1, wherein the first and second seal are adapted to sandwich the substrate therebetween when the contact ring and the thrust plate are moved towards each other.

11. (Original) Apparatus for electro-chemical deposition on a substrate, comprising:

an annular contact ring;

one or more electrical contact pads disposed on the contact ring;

a first seal disposed inward of the electrical contact pad and in sealing communication with the contact ring;

a thrust plate adapted to move axially relative to the contact ring;

a second seal coupled to the thrust plate;

a third seal coupled to the thrust plate radially outward of the second seal, the third seal contacting the contact ring and the thrust plate when the contact ring and the thrust plate are moved towards each other.

12. (Currently Amended) The apparatus of claim 11, wherein the contact ring further comprises:

a first surface;

a shoulder coupled to the first surface;

a substrate support surface extending inward of ~~from~~ shoulder portion and supporting the electrical contact pad thereon, the substrate support portion and shoulder defining a substrate receiving pocket; and

an inner ring surface disposed radially inward of the substrate support portion.

13. (Original) The apparatus of claim 11, wherein the first and second seal are adapted to sandwich the substrate therebetween when the contact ring and the thrust plate are moved towards each other.

14. (Original) The apparatus of claim 11, wherein the contact ring further comprises:

a conductive material covered by an insulative covering, the electrical contact pad formed where the insulative covering is removed to expose a portion of the conductive material.

15. (Original) The apparatus of claim 11, wherein the contact ring further comprises:

an insulative body having the electrical contact pad disposed thereon; and

a plurality of conductive connectors at least partially embedded within the insulative body and coupled to the electrical contact pad.

16. (Currently Amended) Apparatus for electro-chemical deposition on a substrate, comprising:

an annular contact ring having a conductive body covered by an insulative covering;

a first means for sealing the contact ring to a feature side of the substrate and for wiping the feature side of the substrate in a radially inward direction when disengaged from the substrate;

a thrust plate adapted to move axially relative to the contact ring; ~~and~~

a second means for sealing the thrust plate to a backside side of the substrate, wherein the first and second means define an inner boundary of an exclusion zone encapsulating an edge of the substrate; and

one or more electrical contact pads formed by removing a portion of the insulative covering of the contact ring in the exclusion zone.

17. (Original) The apparatus of claim 16, wherein the first means is a gasket, o-ring, lip seal, cup seal, lobed ring or fluid seal.

18. (Original) The apparatus of claim 16, wherein the second means is a gasket, o-ring, lip seal, cup seal, lobed ring or fluid seal.

19. (Original) The apparatus of claim 16 further comprising a third means for sealing the thrust plate to the contact plate, the third means defining an outer bounds of the exclusion zone.

20. (Original) The apparatus of claim 19, wherein the third means is a gasket, o-ring, lip seal, cup seal, lobed ring or fluid seal.

21. (Currently Amended) Apparatus for electro-chemical deposition on a substrate, comprising:

a container body;

an anode disposed in the container body

a head assembly comprising:

a1

an annular contact ring having a conductive body covered by an insulative covering;

a first seal providing a seal between the contact ring and a feature side of the substrate;

a thrust plate adapted to move axially relative to the contact ring; and

a second seal providing a seal between the thrust plate and a backside side of the substrate;

a third seal providing a seal between the thrust plate and the contact ring, wherein the first, second and third seal bound an exclusion zone encapsulating an edge of the substrate; ~~and~~

one or more electrical contact pads adapted to bias the substrate disposed in the exclusion zone; and

an electrolyte inlet positioned to supply electrolyte to an area of the substrate disposed radially inward of the first seal.

22. (Currently Amended) Apparatus for electro-chemical deposition on a substrate, comprising:

an insulative coating; and

an annular conductive body at least partially covered by the insulative coating, the conductive body comprising:

a top surface having a flange, a substrate seating surface and a shoulder disposed between the flange and the substrate seating surface, the flange at least partially covered by the insulative coating; ~~and~~

at least one exposed conductive pad disposed on the substrate seating surface[[.]] ;

an outer diameter coupled to the flange; and

a bottom surface coupled to the outer diameter opposite the top surface, the outer diameter and bottom surface at least partially covered by the insulative coating.

a1

23. (Original) The apparatus of claim 22, wherein the conductive body further comprises:

a cylindrical wall disposed between the shoulder and the substrate seating surface, the cylindrical wall and the substrate seating surface defining a substrate receiving pocket.

24. (Original) The apparatus of claim 22 further comprising:

a seal disposed proximate an inner diameter of the conductive body.

25. (Original) The apparatus of claim 24, wherein the seal extends above the substrate seating surface when in a free state.

26. (Original) The apparatus of claim 22, wherein the at least one exposed conductive pad comprises a single ring.

27. (Original) The apparatus of claim 22, wherein the at least one exposed conductive pad comprises a plurality of pads.

28. (Cancelled) A seal for for electro-chemical deposition comprising:

an annular base;

a lip extending therefrom, the lip having a first sealing surface disposed radially inwards of the base.

29. (Cancelled) A method of plating a substrate comprising:

positioning the substrate to in a contact plate;

creating a first fluid seal between a feature side of the substrate and the contact ring;

creating a second fluid seal between a thrust plate and the contact ring radially outward of the substrate; and

exposing a surface of the substrate disposed radially inward of the first seal to an electrolyte.

a 1

30. (Cancelled) The method of claim 29, wherein the step of chucking further comprises;

creating a third fluid seal between the substrate and the thrust plate to define a plenum; and

at least partially evacuating the plenum.

31. (Cancelled) The method of claim 29, wherein the step of creating the first fluid seal further comprises:

moving the thrust plate towards the contact ring.

32. (Cancelled) The method of claim 31 further comprising:

creating a third fluid seal between the thrust plate and contact ring, wherein the first fluid seal, second fluid seal and third fluid seal define an exclusion zone encapsulating an edge of the substrate.

33. (Cancelled) The method of claim 31 further comprising:

moving the trust plate away from the contact plate; and

wiping the substrate as the first fluid seal is removed.

34. (Cancelled) A method of plating a substrate comprising:

creating a first fluid seal between a backside of the substrate and a thrust plate;

creating a second fluid seal between a feature side of the substrate and a contact ring;

creating a third fluid seal between the thrust plate and the contact ring radially outward of the substrate; and

exposing a surface of the substrate disposed radially inward of the second seal to an electrolyte.

35. (Cancelled) The method of claim 34 further comprising:

applying at least a partial vacuum between the thrust plate and the substrate.

a 1

36. (Cancelled) The method of claim 34, wherein the step of creating the third fluid seal further comprises:

moving the thrust plate towards the contact ring.

37. (Cancelled) The method of claim 34, wherein the step of creating the second fluid seal further comprises:

contacting a portion of a seal to the substrate;

moving the substrate to deform the seal; and

contacting a portion of the contact ring with a portion of the deformed seal.

38. (Cancelled) The method of claim 37 further comprising:

moving the substrate away from the deformed seal; and

wiping the substrate as the deformed seal returned to an undeformed state.

39. (Cancelled) The method of claim 38, wherein the step of wiping further comprises moving a portion of the seal in contact with the substrate radially inward.

40. (Cancelled) A method of plating a substrate comprising:

creating a first fluid seal in communication with a backside of the substrate;

creating a second fluid seal in communication with a feature side of the substrate;

creating a third fluid seal radially outward of the substrate, the third seal encapsulating an edge of the substrate with the first and second seals; and

exposing a surface of the substrate disposed radially inward of the second seal to an electrolyte.

41. (Cancelled) The method of claim 40 further comprising:

wiping the feature side of the substrate as the second fluid seal is removed.

42. (Cancelled) A method of plating a substrate comprising:

chucking the substrate to a thrust plate;

moving the substrate to sealingly contact a feature side of the substrate with a first fluid seal;

deforming the first fluid seal to sealingly contact a contact ring;

sealing the thrust plate and the contact ring radially outward of the substrate; and

exposing a surface of the substrate disposed radially inward of the first seal to an electrolyte.

43. (Cancelled) The method of claim 42 further comprising:

applying at least a partial vacuum between the thrust plate and the substrate.

44. (Cancelled) The method of claim 42 further comprising:

isolating an edge of the substrate from the electrolyte by encapsulating the edge between three seals.

45. (Cancelled) The method of claim 42 further comprising:

moving the substrate away from the first seal; and

wiping the substrate as the first seal returned to an undeformed state.

46. (New) The apparatus of claim 24, wherein the seal further comprises:

a base disposed in a groove at least partially formed in the contact ring; and

a lip extending upward from the base and flaring radially outward towards the contact pads.

47. (New) The apparatus of claim 46, wherein the seal is configured to wipe a side of the substrate disposed on the contact pad in a radially inward direction when disengaged from the substrate.

48. (New) The apparatus of claim 24, wherein the seal is configured to wipe a side of the substrate disposed on the contact pad in a radially inward direction when disengaged from the substrate.

49. New) The apparatus of claim 11, wherein the first seal further comprises:

a base disposed in a groove at least partially formed in the contact ring; and

and a lip extending from the base and flaring radially outward towards the contact pads, the lip having at least one sealing surface.

50. (New) The apparatus of claim 11, wherein the seal is configured to wipe a side of the substrate disposed on the contact pad in a radially inward direction when disengaged from the substrate.

51. (New) Apparatus for electro-chemical deposition on a substrate, comprising:

an annular contact ring;

one or more electrical contact pads disposed on the contact ring adapted to make electrical contact with a face of a substrate supported on the contact ring;

a thrust plate adapted to move axially relative to the contact ring; and

a seal disposed inward of the electrical contact pad and having a sealing lip positioned to sealing engage the face of the substrate and the contact ring upon axial movement of the substrate into the contact with the seal, the seal positioned so that upon engagement of the substrate with the seal, the sealing lip moves laterally outwards to wipe the face of the substrate, and upon disengagement of the substrate with the seal, the sealing lip moves laterally inward to wipe the face of the substrate.

a1